# Exhibit 3 – Sample MOVES Input Files

This appendix provides a partial recreation of locally derived MOVES County Data Manager inputs utilized by ARC to produce the both the eight-hour ozone and the annual PM2.5 maintenance plan emissions inventories. Only 13-county 2008 ozone data is demonstrated and the tables are abbreviated where noted. A full set of inputs for all combinations of counties and pollutants are available, by request.

## Table 1 – Age Distribution (abbreviated from 404 rows)

|  |  |  |  |
| --- | --- | --- | --- |
| sourceTypeID | yearID | ageID | ageFraction |
| 21 | 2008 | 0 | 0.023802 |
| 21 | 2008 | 1 | 0.071207 |
| 21 | 2008 | 2 | 0.068707 |
| 21 | 2008 | 3 | 0.077108 |
| 21 | 2008 | 4 | 0.072907 |
| 21 | 2008 | 5 | 0.067107 |
| 21 | 2008 | 6 | 0.068907 |
| 21 | 2008 | 7 | 0.065607 |
| 21 | 2008 | 8 | 0.076308 |
| 21 | 2008 | 9 | 0.061806 |
| 21 | 2008 | 10 | 0.055906 |
| 21 | 2008 | 11 | 0.046105 |
| 21 | 2008 | 12 | 0.039904 |
| 21 | 2008 | 13 | 0.037004 |
| 21 | 2008 | 14 | 0.032503 |
| 21 | 2008 | 15 | 0.026703 |
| 21 | 2008 | 16 | 0.021402 |
| 21 | 2008 | 17 | 0.016602 |
| 21 | 2008 | 18 | 0.012601 |
| 21 | 2008 | 19 | 0.008901 |
| 21 | 2008 | 20 | 0.005401 |
| 21 | 2008 | 21 | 0.0032 |
| 21 | 2008 | 22 | 0.0026 |
| 21 | 2008 | 23 | 0.0023 |
| 21 | 2008 | 24 | 0.002035 |
| 21 | 2008 | 25 | 0.0018 |
| 21 | 2008 | 26 | 0.001592 |
| 21 | 2008 | 27 | 0.001409 |
| 21 | 2008 | 28 | 0.001246 |

## Table 2 – Average Speed Distribution (abbreviated from 19,969 rows)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| sourceTypeID | roadTypeID | hourDayID | avgSpeedBinID | avgSpeedFraction |
| 11 | 2 | 15 | 6 | 0.00104 |
| 21 | 2 | 15 | 6 | 0.00104 |
| 31 | 2 | 15 | 6 | 0.00104 |
| 32 | 2 | 15 | 6 | 0.00104 |
| 41 | 2 | 15 | 6 | 0.00104 |
| 42 | 2 | 15 | 6 | 0.00104 |
| 43 | 2 | 15 | 6 | 0.00104 |
| 51 | 2 | 15 | 6 | 0.00104 |
| 52 | 2 | 15 | 6 | 0.00104 |
| 53 | 2 | 15 | 6 | 0.00104 |
| 54 | 2 | 15 | 6 | 0.00104 |
| 61 | 2 | 15 | 6 | 0.00104 |
| 62 | 2 | 15 | 6 | 0.00104 |
| 11 | 2 | 15 | 7 | 0.00094 |
| 21 | 2 | 15 | 7 | 0.00094 |
| 31 | 2 | 15 | 7 | 0.00094 |
| 32 | 2 | 15 | 7 | 0.00094 |
| 41 | 2 | 15 | 7 | 0.00094 |
| 42 | 2 | 15 | 7 | 0.00094 |
| 43 | 2 | 15 | 7 | 0.00094 |
| 51 | 2 | 15 | 7 | 0.00094 |
| 52 | 2 | 15 | 7 | 0.00094 |
| 53 | 2 | 15 | 7 | 0.00094 |
| 54 | 2 | 15 | 7 | 0.00094 |
| 61 | 2 | 15 | 7 | 0.00094 |
| 62 | 2 | 15 | 7 | 0.00094 |
| 11 | 2 | 15 | 8 | 0 |
| 21 | 2 | 15 | 8 | 0 |
| 31 | 2 | 15 | 8 | 0 |
| 32 | 2 | 15 | 8 | 0 |
| 41 | 2 | 15 | 8 | 0 |
| 42 | 2 | 15 | 8 | 0 |
| 43 | 2 | 15 | 8 | 0 |
| 51 | 2 | 15 | 8 | 0 |
| 52 | 2 | 15 | 8 | 0 |
| 53 | 2 | 15 | 8 | 0 |
| 54 | 2 | 15 | 8 | 0 |
| 61 | 2 | 15 | 8 | 0 |
| 62 | 2 | 15 | 8 | 0 |

## Table 3 – Fuel Supply

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| countyID | fuelYearID | monthGroupID | fuelFormulationID | marketShare | marketShareCV |
| 13121 | 2008 | 7 | 2334 | 0.428571 | 0.5 |
| 13121 | 2008 | 7 | 7733 | 0.571429 | 0.5 |
| 13121 | 2008 | 7 | 20043 | 1 | 0.5 |

**Table 4 – Fuel Formulation (abbreviated from 8,930 rows)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fuel  FormulationID | fuelSubtypeID | RVP | sulfurLevel | ETOH  Volume | MTBE  Volume | ETBE  Volume | TAME  Volume | Aromatic  Content | Olefin  Content | Benzene  Content | e200 | e300 | BioDiesel  EsterVolume | Cetane  Index | PAH  Content |
| 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 10 | 8.7 | 338 | 0 | 0 | 0 | 0 | 26.4 | 11.9 | 1.64 | 50 | 83 | 0 | 0 | 0 |
| 97 | 10 | 6.6 | 150 | 0 | 11.7581 | 0 | 0 | 24 | 11 | 0.8 | 52 | 84 | 0 | 0 | 0 |
| 98 | 10 | 6.9 | 30 | 0 | 0 | 0 | 0 | 26.1 | 5.6 | 1 | 41.09 | 83.09 | 0 | 0 | 0 |
| 99 | 10 | 6.9 | 90 | 0 | 0 | 0 | 0 | 26.1 | 5.6 | 1 | 41.09 | 83.09 | 0 | 0 | 0 |
| 4045 | 10 | 12.5 | 290.1 | 0 | 0.8 | 0 | 0 | 27.1 | 10.7 | 0.9 | 50.1 | 81.2 | 0 | 0 | 0 |
| 4046 | 10 | 10.3286 | 261.24 | 0 | 1.6 | 0 | 0 | 29.6 | 10.7 | 1 | 45.7 | 79.8 | 0 | 0 | 0 |
| 4047 | 10 | 8.7 | 261.24 | 0 | 1.6 | 0 | 0 | 29.6 | 10.7 | 1 | 45.7 | 79.8 | 0 | 0 | 0 |
| 4048 | 10 | 8.7 | 239.6 | 0 | 2.1 | 0 | 0 | 31.5 | 10.7 | 1 | 42.3 | 78.8 | 0 | 0 | 0 |
| 4049 | 10 | 12.5 | 307.5 | 0 | 0.6 | 0 | 0 | 26.7 | 11.3 | 0.9 | 50.7 | 81.2 | 0 | 0 | 0 |
| 4050 | 10 | 10.3286 | 275.67 | 0 | 1.5 | 0 | 0 | 29.4 | 11.2 | 1 | 46.1 | 79.7 | 0 | 0 | 0 |
| 4051 | 10 | 8.7 | 275.67 | 0 | 1.5 | 0 | 0 | 29.4 | 11.2 | 1 | 46.1 | 79.7 | 0 | 0 | 0 |
| 4052 | 10 | 8.7 | 251.8 | 0 | 2.1 | 0 | 0 | 31.3 | 11.2 | 1.1 | 42.6 | 78.6 | 0 | 0 | 0 |
| 4053 | 10 | 12 | 150.32 | 0 | 0.1 | 0 | 0 | 19.4 | 6.8 | 1.2 | 55.3 | 85.1 | 0 | 0 | 0 |
| 4054 | 10 | 10.5333 | 187.56 | 0 | 0.3 | 0 | 0 | 23.1 | 9 | 1.3 | 50.6 | 83.8 | 0 | 0 | 0 |
| 4055 | 10 | 9.43333 | 215.48 | 0 | 0.4 | 0 | 0 | 25.9 | 10.7 | 1.4 | 47 | 82.8 | 0 | 0 | 0 |
| 4056 | 10 | 8.7 | 215.48 | 0 | 0.4 | 0 | 0 | 25.9 | 10.7 | 1.4 | 47 | 82.8 | 0 | 0 | 0 |
| 4057 | 10 | 8.7 | 234.1 | 0 | 0.4 | 0 | 0 | 27.7 | 11.8 | 1.5 | 44.6 | 82.2 | 0 | 0 | 0 |
| 4058 | 10 | 8.71834 | 215.48 | 0 | 0.4 | 0 | 0 | 25.9 | 10.7 | 1.4 | 47 | 82.8 | 0 | 0 | 0 |
| 4080 | 10 | 12.3 | 337.4 | 0 | 1 | 0 | 0 | 24.9 | 11.1 | 0.8 | 50.3 | 81.3 | 0 | 0 | 0 |
| 4081 | 10 | 8.7 | 356.4 | 0 | 1.7 | 0 | 0 | 30.6 | 10.2 | 1 | 43.5 | 79.2 | 0 | 0 | 0 |
| 4082 | 10 | 12.5 | 291.2 | 0 | 0.8 | 0 | 0 | 27 | 10.8 | 0.9 | 50.2 | 81.3 | 0 | 0 | 0 |
| 4083 | 10 | 10.3286 | 262.11 | 0 | 1.6 | 0 | 0 | 29.6 | 10.7 | 1 | 45.7 | 79.8 | 0 | 0 | 0 |

**Table 5 – I/M Program (abbreviated from 49 rows)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pol  Process  ID | State  ID | countyID | year ID | Source  TypeID | Fuel  Type  ID | IMProgram ID | begModel  YearID | endModel  YearID | Inspect  Freq | Test  Standards ID | Use  IMyn | Compliance  Factor |
| 101 | 13 | 13121 | 2008 | 21 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 94.09 |
| 101 | 13 | 13121 | 2008 | 31 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 88.44 |
| 101 | 13 | 13121 | 2008 | 32 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 82.8 |
| 101 | 13 | 13121 | 2008 | 21 | 1 | 1 | 1996 | 2013 | 1 | 51 | Y | 94.09 |
| 101 | 13 | 13121 | 2008 | 31 | 1 | 1 | 1996 | 2013 | 1 | 51 | Y | 88.44 |
| 101 | 13 | 13121 | 2008 | 32 | 1 | 1 | 1996 | 2013 | 1 | 51 | Y | 82.8 |
| 102 | 13 | 13121 | 2008 | 21 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 94.09 |
| 102 | 13 | 13121 | 2008 | 31 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 88.44 |
| 102 | 13 | 13121 | 2008 | 32 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 82.8 |
| 102 | 13 | 13121 | 2008 | 21 | 1 | 1 | 1996 | 2013 | 1 | 51 | Y | 94.09 |
| 102 | 13 | 13121 | 2008 | 31 | 1 | 1 | 1996 | 2013 | 1 | 51 | Y | 88.44 |
| 102 | 13 | 13121 | 2008 | 32 | 1 | 1 | 1996 | 2013 | 1 | 51 | Y | 82.8 |
| 112 | 13 | 13121 | 2008 | 21 | 1 | 4 | 1992 | 1995 | 1 | 41 | Y | 97 |
| 112 | 13 | 13121 | 2008 | 31 | 1 | 4 | 1992 | 1995 | 1 | 41 | Y | 97 |
| 112 | 13 | 13121 | 2008 | 32 | 1 | 4 | 1992 | 1995 | 1 | 41 | Y | 97 |
| 112 | 13 | 13121 | 2008 | 21 | 1 | 2 | 1996 | 2013 | 1 | 45 | Y | 97 |
| 112 | 13 | 13121 | 2008 | 31 | 1 | 2 | 1996 | 2013 | 1 | 45 | Y | 97 |
| 112 | 13 | 13121 | 2008 | 32 | 1 | 2 | 1996 | 2013 | 1 | 45 | Y | 97 |
| 113 | 13 | 13121 | 2008 | 21 | 1 | 4 | 1992 | 1995 | 1 | 41 | Y | 97 |
| 113 | 13 | 13121 | 2008 | 31 | 1 | 4 | 1992 | 1995 | 1 | 41 | Y | 97 |
| 113 | 13 | 13121 | 2008 | 32 | 1 | 4 | 1992 | 1995 | 1 | 41 | Y | 97 |
| 113 | 13 | 13121 | 2008 | 21 | 1 | 2 | 1996 | 2013 | 1 | 45 | Y | 97 |
| 113 | 13 | 13121 | 2008 | 31 | 1 | 2 | 1996 | 2013 | 1 | 45 | Y | 97 |
| 113 | 13 | 13121 | 2008 | 32 | 1 | 2 | 1996 | 2013 | 1 | 45 | Y | 97 |
| 201 | 13 | 13121 | 2008 | 21 | 1 | 3 | 1992 | 1995 | 1 | 23 | Y | 94.09 |

**Table 6 – Meteorology**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| monthID | zoneID | HourID | temperature | relHumidity |
| 7 | 131210 | 1 | 71.71 | 82.25 |
| 7 | 131210 | 2 | 70.31 | 83.65 |
| 7 | 131210 | 3 | 69.29 | 85.53 |
| 7 | 131210 | 4 | 68.49 | 86.85 |
| 7 | 131210 | 5 | 67.82 | 87.83 |
| 7 | 131210 | 6 | 67.21 | 88.96 |
| 7 | 131210 | 7 | 67.19 | 89.19 |
| 7 | 131210 | 8 | 69.79 | 85.91 |
| 7 | 131210 | 9 | 74.04 | 78.88 |
| 7 | 131210 | 10 | 78.73 | 70.22 |
| 7 | 131210 | 11 | 82.63 | 62.95 |
| 7 | 131210 | 12 | 85.50 | 57.15 |
| 7 | 131210 | 13 | 87.41 | 53.18 |
| 7 | 131210 | 14 | 88.70 | 50.45 |
| 7 | 131210 | 15 | 89.11 | 49.30 |
| 7 | 131210 | 16 | 89.37 | 48.66 |
| 7 | 131210 | 17 | 89.12 | 48.73 |
| 7 | 131210 | 18 | 88.16 | 49.96 |
| 7 | 131210 | 19 | 85.91 | 53.67 |
| 7 | 131210 | 20 | 82.85 | 59.71 |
| 7 | 131210 | 21 | 78.92 | 67.70 |
| 7 | 131210 | 22 | 76.22 | 73.15 |
| 7 | 131210 | 23 | 74.39 | 76.72 |
| 7 | 131210 | 24 | 72.89 | 79.77 |

**Table 7 – Ramp Fraction**

|  |  |
| --- | --- |
| roadTypeID | rampFraction |
| 2 | 0.0009 |
| 4 | 0.0696 |

**Table 8 – Road Type Distribution (abbreviated from 66 rows)**

|  |  |  |
| --- | --- | --- |
| sourceTypeID | roadTypeID | roadTypeVMTFraction |
| 11 | 1 | 0 |
| 11 | 2 | 0.073787 |
| 11 | 3 | 0.164518 |
| 11 | 4 | 0.337517 |
| 11 | 5 | 0.424178 |
| 21 | 1 | 0 |
| 21 | 2 | 0.073787 |
| 21 | 3 | 0.164518 |
| 21 | 4 | 0.337517 |
| 21 | 5 | 0.424178 |
| 31 | 1 | 0 |
| 31 | 2 | 0.073787 |
| 31 | 3 | 0.164518 |
| 31 | 4 | 0.337517 |
| 31 | 5 | 0.424178 |
| 32 | 1 | 0 |
| 32 | 2 | 0.073787 |
| 32 | 3 | 0.164518 |
| 32 | 4 | 0.337517 |
| 32 | 5 | 0.424178 |
| 41 | 1 | 0 |
| 41 | 2 | 0.073787 |
| 41 | 3 | 0.164518 |
| 41 | 4 | 0.337517 |
| 41 | 5 | 0.424178 |
| 42 | 1 | 0 |
| 42 | 2 | 0.073787 |
| 42 | 3 | 0.164518 |
| 42 | 4 | 0.337517 |
| 42 | 5 | 0.424178 |
| 43 | 1 | 0 |
| 43 | 2 | 0.073787 |
| 43 | 3 | 0.164518 |
| 43 | 4 | 0.337517 |
| 43 | 5 | 0.424178 |
| 51 | 1 | 0 |
| 51 | 2 | 0.073787 |
| 51 | 3 | 0.164518 |
| 51 | 4 | 0.337517 |
| 51 | 5 | 0.424178 |
| 52 | 1 | 0 |
| 52 | 2 | 0.073787 |
| 52 | 3 | 0.164518 |

**Table 9 – Source Type Population**

|  |  |  |
| --- | --- | --- |
| yearID | sourceTypeID | sourceTypePopulation |
| 2008 | 11 | 73864 |
| 2008 | 21 | 2001377 |
| 2008 | 31 | 1121306 |
| 2008 | 32 | 366902 |
| 2008 | 41 | 1229 |
| 2008 | 42 | 753 |
| 2008 | 43 | 12261 |
| 2008 | 51 | 1490 |
| 2008 | 52 | 47443 |
| 2008 | 53 | 3352 |
| 2008 | 54 | 4689 |
| 2008 | 61 | 24206 |
| 2008 | 62 | 13711 |

**Table 10 – HPMSvTypeYear**

|  |  |  |  |
| --- | --- | --- | --- |
| HPMSVtypeID | yearID | HPMSBaseYearVMT | baseYearOffNetVMT |
| 10 | 2008 | 100838332.4 | 0 |
| 20 | 2008 | 24962627984 | 0 |
| 30 | 2008 | 16903826823 | 0 |
| 40 | 2008 | 270003514.9 | 0 |
| 50 | 2008 | 1198697478 | 0 |
| 60 | 2008 | 1441642047 | 0 |

**Table 11 – Month VMT Fraction (abbreviated from 157 rows)**

|  |  |  |  |
| --- | --- | --- | --- |
| sourceTypeID | isLeapYear | monthID | monthVMTFraction |
| 11 | Y | 1 | 0.072904 |
| 11 | Y | 2 | 0.072023 |
| 11 | Y | 3 | 0.081529 |
| 11 | Y | 4 | 0.082098 |
| 11 | Y | 5 | 0.087285 |
| 11 | Y | 6 | 0.088052 |
| 11 | Y | 7 | 0.092096 |
| 11 | Y | 8 | 0.093198 |
| 11 | Y | 9 | 0.08447 |
| 11 | Y | 10 | 0.086301 |
| 11 | Y | 11 | 0.080029 |
| 11 | Y | 12 | 0.080015 |

**Table 12 – Day VMT Fraction (abbreviated from 1561 rows)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| sourceTypeID | monthID | roadTypeID | dayID | dayVMTFraction |
| 11 | 1 | 1 | 2 | 0.237635 |
| 11 | 1 | 1 | 5 | 0.762365 |
| 11 | 1 | 2 | 2 | 0.237635 |
| 11 | 1 | 2 | 5 | 0.762365 |
| 11 | 1 | 3 | 2 | 0.237635 |
| 11 | 1 | 3 | 5 | 0.762365 |
| 11 | 1 | 4 | 2 | 0.237635 |
| 11 | 1 | 4 | 5 | 0.762365 |
| 11 | 1 | 5 | 2 | 0.237635 |
| 11 | 1 | 5 | 5 | 0.762365 |
| 11 | 2 | 1 | 2 | 0.237635 |
| 11 | 2 | 1 | 5 | 0.762365 |
| 11 | 2 | 2 | 2 | 0.237635 |
| 11 | 2 | 2 | 5 | 0.762365 |
| 11 | 2 | 3 | 2 | 0.237635 |
| 11 | 2 | 3 | 5 | 0.762365 |
| 11 | 2 | 4 | 2 | 0.237635 |
| 11 | 2 | 4 | 5 | 0.762365 |
| 11 | 2 | 5 | 2 | 0.237635 |
| 11 | 2 | 5 | 5 | 0.762365 |

**Table 13 – Hour VMT Fraction (abbreviated from 1561 rows)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| sourceTypeID | roadTypeID | dayID | hourID | hourVMTFraction |
| 11 | 1 | 5 | 1 | 0.00986 |
| 11 | 1 | 5 | 2 | 0.00627 |
| 11 | 1 | 5 | 3 | 0.00506 |
| 11 | 1 | 5 | 4 | 0.00467 |
| 11 | 1 | 5 | 5 | 0.00699 |
| 11 | 1 | 5 | 6 | 0.01849 |
| 11 | 1 | 5 | 7 | 0.04596 |
| 11 | 1 | 5 | 8 | 0.06964 |
| 11 | 1 | 5 | 9 | 0.06083 |
| 11 | 1 | 5 | 10 | 0.05029 |
| 11 | 1 | 5 | 11 | 0.04994 |
| 11 | 1 | 5 | 12 | 0.05437 |
| 11 | 1 | 5 | 13 | 0.05765 |
| 11 | 1 | 5 | 14 | 0.05803 |
| 11 | 1 | 5 | 15 | 0.06226 |
| 11 | 1 | 5 | 16 | 0.071 |
| 11 | 1 | 5 | 17 | 0.07697 |
| 11 | 1 | 5 | 18 | 0.07743 |
| 11 | 1 | 5 | 19 | 0.05978 |
| 11 | 1 | 5 | 20 | 0.04439 |
| 11 | 1 | 5 | 21 | 0.03545 |
| 11 | 1 | 5 | 22 | 0.03182 |
| 11 | 1 | 5 | 23 | 0.02494 |
| 11 | 1 | 5 | 24 | 0.01791 |